



NATIONAL SCIENCE FOUNDATION

**SEMIANNUAL  
REPORT TO THE  
CONGRESS**

**March, 2005**

**Office of the  
Inspector General**

## About

### The National Science Foundation...

The National Science Foundation (NSF) is charged with supporting and strengthening all research disciplines, and providing leadership across the broad and expanding frontiers of scientific and engineering knowledge. It is governed by the National Science Board which sets agency policies and provides oversight of its activities.

NSF invests approximately \$5 billion per year in almost 30,000 research and education projects in science and engineering, and is responsible for the establishment of an information base for science and engineering appropriate for development of national and international policy. Over time, other responsibilities have been added including fostering and supporting the development and use of computers and other scientific methods and technologies; providing Antarctic research, facilities and logistic support; and addressing issues of equal opportunity in science and engineering.

### ... And The Office of Inspector General

NSF's Office of Inspector General promotes economy, efficiency, and effectiveness in administering the Foundation's programs; detects and prevents fraud, waste, and abuse within NSF or by individuals that receive NSF funding; and identifies and helps to resolve cases of misconduct in science. The OIG was established in 1989, in compliance with the Inspector General Act of 1978, as amended. Because the Inspector General reports directly to the National Science Board and Congress, the Office is organizationally and operationally independent from the agency.

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## From the Inspector General

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This report highlights the activities of the National Science Foundation (NSF) Office of Inspector General (OIG) for the six months ending March 31, 2005. I am extremely proud of the staff's efforts during this period. Our office issued 15 audit reports and reviews containing \$41,602,281 in questioned costs and made recommendations that would put \$620,020 in federal funds to better use. We closed 27 civil/criminal cases and 31 administrative cases, and our investigations produced \$230,568 in recoveries. In an era when government budgets are getting tighter, these savings represent a significant source of NSF funding for new research and improved post-award operations. More about OIG's accomplishments is included in our annual Performance Report on p. 39.

Last December, the Inspector General community issued *A Strategic Framework* which presented our collective mission, vision and goals for the next five years. It states that the federal Offices of Inspector General have two basic roles: 1) to identify and report on current problems and 2) to foster effective program management to prevent future problems. Consistent with these important responsibilities, this Semiannual continues to report on audits and investigations that reflect the significant management challenges we have identified at NSF, such as post-award administration, the strategic management of human capital, and the management of large infrastructure projects. I am confident that the agency will continue its efforts to address these challenges, and I look forward to providing whatever OIG assistance may be needed.

I would also like to offer a warm welcome to the new members of the National Science Board: Dr. Dan Arvizu, Dr. G. Wayne Clough, Dr. Kelvin Droegemeier, Dr. Louis Lanzerotti, Dr. Alan Leshner, Dr. Jon Strauss, and Dr. Kathryn Sullivan. It is a privilege to work with you and our returning Board members to continue the agency's impressive record of accomplishment.

A handwritten signature in cursive script that reads 'Christine C. Boesz'.

Christine C. Boesz, Dr.P.H.  
Inspector General  
May 19, 2005



# Executive Summary

- The Inspector General testified before the U.S. House of Representatives, Committee on Science, Subcommittee on Research that the two most important management challenges facing NSF are strategic management of NSF resources and improved financial performance. Dr. Boesz also submitted a statement for the record before the U.S. Senate Committee on Appropriations that discussed in more detail NSF's challenge in managing large infrastructure projects. (p. 7)
- In accordance with the Chief Financial Officer's Act of 1990, KPMG LLP conducted an audit of NSF's financial statements for FY 2004 and issued another unqualified opinion to NSF. However, the auditors identified post-award monitoring as a reportable condition for the fourth consecutive year. The auditors also identified a second reportable condition concerning NSF's monitoring of its largest contractors. (p. 13)
- At NSF's request, the OIG contracted with the Defense Contract Audit Agency (DCAA), to complete an audit of Raytheon Polar Services Company (RPSC) discussed in an earlier Semiannual Report. The auditors added \$4 million in unsupported costs over what was previously reported, bringing total questioned costs to \$33.4 million, or 9.2 percent of the \$363 million total costs claimed by the contractor for the three year period ending December 31, 2002. Raytheon Polar Services is NSF's primary support contractor for the United States Antarctic Program. (p. 15)
- OIG auditors found that over a 5-year period, approximately 47 percent of the 151,000 final and annual reports required by the terms and conditions of NSF's grants and cooperative agreements were submitted late or not at all. Of the 43,000 *final* project reports, 8 percent were never submitted, and 53 percent were submitted, on average, 5 months late. Of the 108,000 *annual* progress reports, 42 percent were never submitted. (p. 16)

- An audit of awards made by NSF, NASA, EPA, and USDA to establish an endowment fund for the United States-Mexico Foundation for Science (USMFS) found that conditions for the funding stipulated by Congress were not included in the grant agreements. Consequently, the USMFS did not obtain \$5 million or 45 percent of matching endowment contributions from Mexico or implement adequate financial controls to account for and administer almost \$11 million of U.S. endowment funds. (p. 17)
- The investigation of an NSF award to a large city school district was resolved with the execution of settlement and compliance agreements and a \$150,000 reduction in a current award to the district. The case arose when OIG attempted to audit the district and identified a number of significant issues including the district's inability or unwillingness to provide adequate documentation to support the \$13.8 million in costs claimed and \$21 million in claimed cost sharing. (p. 27)
- NSF declined to debar its former Travel Card Program Manager who pled guilty to the willful and unlawful destruction of an official government record, a felony. The manager misused her own government travel card on approximately four dozen occasions, and concealed her misuse from an OIG audit by deleting information from official agency records. (p. 28)
- An EPSCoR institution in Oklahoma voluntarily suspended work with animals under an REU award and ultimately changed the scope of the project to eliminate the animal work when it was unable to achieve compliance with NSF policy. The institution failed to self-identify its work with humans and animals in the proposal, as required, despite its use of both as research subjects. (p. 35)

# OIG Management Activities

## Congressional Testimony

The Inspector General testified before the U.S. House of Representatives, Committee on Science, Subcommittee on Research on March 9, 2005. Dr. Boesz told Congress that she considers the two most important management challenges facing NSF to be strategic management of NSF resources and improved financial performance.

The IG said that strategic management of NSF administrative resources, especially human capital, remains a pressing issue. In 2002, NSF launched a multi-year business analysis effort to address this challenge, yet is still engaged in the development of a workforce plan. While NSF's workload has rapidly increased over the past few years, the agency has not identified the amount of staffing and other administrative resources needed to address this growing disparity. NSF's critical staffing shortage is evident in the agency's management and oversight of its large facility portfolio. It is also apparent by the lack of resources that have been assigned to carry out many of NSF's general post-award monitoring responsibilities.

The second challenge Dr. Boesz discussed was improved financial performance through better post-award administration. For four consecutive years auditors have found that NSF's monitoring of grantee institutions has significant weaknesses. Primarily, NSF's current program is not comprehensive enough for it to be effective in identifying and resolving issues. She said that an effective monitoring program would ensure that awardees are complying with federal requirements, making adequate progress toward achieving research objectives, and charging

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allowable costs. Further, a recent audit by OIG found that many research reports, which are used to monitor progress, are submitted significantly late or not at all.

While NSF has taken steps over the past 3 years to improve its post-award administration, progress is slow and much remains to be done. While new resources would be desirable, Dr. Boesz testified that she believed that realignment of certain management priorities would ease some of the burden. Just as the scientific enterprise has changed over the past few decades, NSF must address its changing administrative challenges by reassessing how it conducts its business. In an environment of increased accountability and stewardship of limited federal funds, effective award administration is essential.

On February 17, 2005, Dr. Boesz submitted a statement for the record before the U.S. Senate Committee on Appropriations. In addition to the two challenges emphasized before the House Subcommittee, the statement discussed in more detail NSF's challenge in managing large infrastructure projects. Although gradual progress is being made, the Large Facility Projects Office that was created by NSF to implement a viable management and oversight program for these projects, faces a number of obstacles. To enable this Office to develop a more influential role, NSF's senior management must clearly recognize and champion its oversight responsibility, and provide it the authority and resources necessary to handle it. Lacking formal influence and staff, the role of the Office is likely to remain primarily advisory and therefore less effective than it could be.

## Legislation Review

### *Statutory and Regulatory Review*

The Inspector General Act of 1978, as amended, mandates that our office monitor and review legislative and regulatory proposals for their impact on the Office of Inspector General (OIG) and the National Science Foundation's (NSF) programs and operations. We perform these tasks for the purpose of providing leadership in activities that are designed to promote economy, effectiveness, efficiency, and the prevention of fraud, waste, abuse and mismanagement. We also keep Congress and NSF management informed of problems and monitor legal issues that have a broad effect on the Inspector General community. During this reporting period, we reviewed 8 bills that either affected NSF, OIG, or both. The following legislation merits discussion in this section.

## **Program Fraud Civil Remedies Act of 1986 (PFCRA)**

A legislative priority that we support is amending PFCRA to include NSF and the 26 other DFE agencies that are currently excluded from participation under the Act's enforcement provisions. The Office of Inspector General's concern related to PFCRA involves the ability of "Designated Federal Entity" (DFE) agencies to fully implement their statutory mission to prevent fraud, waste and abuse by availing themselves of the enforcement capabilities contained within the Act. In fact, we have raised the issue of NSF's inclusion under the PFCRA legislation in several prior semi-annual reports.

PFCRA sets forth administrative procedures that address allegations of program fraud when the claims are less than \$150,000.00. Currently, the executive departments, military departments, establishments, as defined under the Inspector General Act of 1978, and the United States Postal Service, are the only agencies permitted to proceed under PFCRA. NSF and other DFE agencies with Inspectors General appointed by agency heads are not included.

We believe that using the enforcement provisions of PFCRA will enhance NSF and other DFE agency recoveries in instances of fraud that fall below PFCRA's jurisdictional threshold of \$150,000.00. In short, including NSF and other DFE agencies under PFCRA will further the OIG community's statutory mission to deter fraud, waste and abuse.

## **Outreach**

As part our ongoing efforts to prevent and detect fraud, waste, and abuse, we seek opportunities to communicate face to face with the communities we serve in order to inform them about the OIG's mission and work, explain NSF's policies and regulations, and learn about the challenges that researchers face in trying to achieve compliance with federal requirements. Our community includes the national and international research communities, other Federal agencies and OIGs, and NSF.



**National Science Board members and the Inspector General tour a border crossing in Texas to observe how technology is being applied to improve homeland security.**

## *Working with the Research Community*

### **OIG Staff Present at Professional Conferences and Universities.**

Organizations within the national and international research communities continue to voice questions about the many complex issues associated with research misconduct, award administration, and regulatory compliance. OIG staff members were invited to attend and present at a wide range of conferences and events held by institutions and associations such as the Society for Research Administrators, the Conference on Institutional Conflicts of Interest, the National Council of University Research Administrators and the American Association for the Advancement of Science. In their presentations, OIG staff contributed to the community's effort to examine these issues, explained the processes in place to correct problems, and encouraged consideration of proactive measures to prevent their recurrence.

University research administrators make requests for OIG staff to provide training or answer questions from university officials involved in applying for and administering NSF awards, conducting supported research, and pursuing university-level inquiries into allegations of research misconduct. During this semiannual period, we visited eight universities for such presentations. In each of these forums, our staff engaged a broad spectrum of the research community in both formal and informal discussions. Among the topics of discussion were identification and prevention of fraud; research misconduct (plagiarism, fabrication, and falsification); cost-sharing and time/effort documentation and reporting; conflicts of interests; and the establishment of compliance programs and committees at research institutions.

## *Working with the Federal Community*

**OIG Hosts the 2004 Grants Fraud Workshop.** During this semiannual period, we organized and hosted a successful one-day Grant Fraud Workshop that was attended by 80 individuals from the Inspector General communities. Presentations were given by 10 representatives from 6 agencies. Case studies on successful grant fraud investigations and prosecutions were presented and discussed at length. The workshop gave participants an opportunity to make new professional acquaintances and discuss best practices currently in use. Our survey of participants indicated that they found the workshop relevant and valuable.

**Participation on PCIE/ECIE Committees.** OIG continues to lead the PCIE/ECIE Misconduct in Research Working Group (MIRWG), which is chaired by NSF's Inspector General. The MIRWG met during this period to

review and update the status of agency efforts to establish policies addressing research misconduct. Many agencies now have active policies regarding this issue. The MIRWG also reviewed case studies of research misconduct that constituted fraud, which OIG representatives found helpful in understanding the potential link between research misconduct and fraud. The MIRWG finalized its Assessment Checklist, which OIGs may use to assess if their respective agencies are complying with the federal policy and investigative standards when conducting their own research misconduct investigations.

The Inspector General serves as an elected member of the Executive Council of IGs, a steering committee for PCIE/ECIE policies and activities. OIG staff continue to actively participate in the PCIE/ECIE Investigations Committee, the PCIE/ECIE Inspections and Evaluation Committee, and the PCIE GPRA Roundtable, which is a forum for discussion of the integration of GPRA requirements into the audit function.

**Audit Community Activities.** NSF OIG audit staff is participating in the Comptroller General's Domestic Grant Working Group with auditors from Federal agencies, states, and a local agency to develop a guide for improving accountability for grant funds. The final document will convey that accountability for dollars and results needs to be considered throughout the grant process, from planning a grant program through managing the grant and evaluation of program results.

Audit staff is also actively involved with the PCIE/ECIE Federal Audit Executive Council, which discusses and coordinates the implementation of Federal initiatives that affect the policy and operations of OIG audit organizations. OIG auditors work with the Financial Statement Audit Network, a committee of the Federal Audit Executive Council, which conducts a forum to discuss key issues concerning the preparation and audit of federal financial statements.

OIG staff serve as members of the Working Group on Stewardship and Accountability sponsored by the National Science and Technology Council Research Business Models Subcommittee. This working group is addressing ways to streamline subrecipient monitoring and improve financial performance.

### **Office of Investigations Undergoes Successful Peer Review**

NSF OIG has played a leading role in a working group designed to assist in the development of effective policies and procedures for voluntary investigative peer review. In October 2004, our Office of Investigations was peer reviewed by a team from the Office of Inspector General of the Government Printing Office. Over a two-week period, the peer review team evaluated the Office of Investigations' internal safeguards and management procedures. The peer review was conducted according to the Qualitative Assessment Review Guidelines for federal Offices of Inspector General. The team concluded that the system of internal safeguards and management procedures for the investigative function of NSF OIG is in full compliance with the quality standards and guidelines established by the PCIE and ECIE.

## **Working with NSF**

**OIG/NSF Liaison Program.** OIG has continued its efforts to establish and maintain effective communication and professional relationships with the individual directorates and offices within NSF. Each NSF office has two OIG liaisons, generally one investigator and one auditor. During this semi-annual period, OIG requested an opportunity to present to each office. In addition, for the first time OIG provided a voluntary survey to Directors, Division Directors, and other staff principals to evaluate the effectiveness of our liaison program. We received replies from over 90% of those surveyed. The overall results of the survey have been very positive. Of particular note, 96% of our NSF colleagues know and are comfortable communicating with their OIG liaisons, and 92% understand both the IG mission and how it supports the NSF mission. OIG is committed to building strong lines of communication with the agency and plans to use information from the survey to identify opportunities to improve.

OIG Staff participated in several NSF sponsored events:

- **NSF Regional Grants Conference at Washington University.** OIG auditors and investigators traveled to Washington University in St. Louis to discuss our activities with awardees from the region, and what is reviewed during a financial and compliance audit.
- **Conflict-of-Interest Briefings.** At the mandatory conflict of interest briefings conducted approximately twice per month by NSF's Designated Agency Ethics Official, we continue to provide a brief overview of the OIG mission and responsibilities; our ongoing liaison program with NSF; and the manner by which employees can bring matters to our attention.
- **Program Manager Seminar Briefings.** OIG staff continue to participate as Resource Personnel in the NSF Program Manager Seminar, which provides new NSF staff with detailed information about the Foundation and its activities.

# OIG FY 2004 Performance Report

This section describes OIG's accomplishments towards the three goals set forth in the OIG Performance Plan for 2004:

1. Increase OIG impact on NSF's effectiveness and efficiency.
2. Safeguard the integrity of NSF programs and resources.
3. Utilize OIG resources effectively and efficiently.

Under each of these goals, we identified several strategies for achieving the goal. For each strategy, we listed specific actions that we planned to complete during the performance period, which ran from April 1, 2004, to March 31, 2005.

## Goal 1: Increase OIG Impact on NSF's Effectiveness and Efficiency

1. Identify and implement approaches to improve audit product quality and timeliness.
  - Develop and implement a tool to assess effectiveness of the story-conferencing process as a means to improve audit product quality and timeliness.
  - Obtain a consultant with Government Auditing Standards expertise to review and comment on the draft audit guide for contract auditors; revise guide as necessary and issue.
  - Assess on-the-job training needs of current audit staff and identify job enrichment training opportunities to broaden auditor experience with various types of NSF audit work.

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- Update and streamline current contract audit monitoring manuals.
- Develop table of contents and milestones to finalize Office of Audit audit quality control standards and procedures manual.
- Assess results of employee survey and develop appropriate steps to address concerns from auditors.

The OIG made progress towards achieving our goal of improving audit timeliness and quality. We used a team-based auditing approach that relies on formal story-conferences between auditors and managers at key points in an audit, thereby facilitating improved communication that results in timelier, higher quality audit reports. Since FY 2003, the Office of Audit (OA) has used the team-based auditing approach on high-risk audits conducted by internal audit staff as well as independent public accounting (IPA) staff that conduct audits under contract with OIG. To assess the effectiveness and efficiency of this process, we developed a questionnaire in FY 2005, which will be incorporated into our Knowledge Management System (KMS) database. At the end of each audit, every audit team member will receive a prompt to complete the questionnaire and the results will be sent to audit management for appropriate action.

The OA retained a consultant with expertise in Government Auditing Standards to review and comment on our draft audit guide for audits performed by IPA firms under contract with OIG. This guide will present the team-based auditing concepts and provide detailed guidance for contractors on their implementation. We also made significant progress in developing policy documents focused on audit quality assurance procedures and standards. OA updated and streamlined procedures manuals for OIG audit staff with responsibility for monitoring contract audits to ensure audit quality and timeliness.

In addition, we added four new sections to our audit quality control policy pertaining to OA standards and expectations regarding independence, independent report referencing, internal quality control, and job rotation. In particular, the job rotation policy provides audit staff with job enrichment training opportunities within OA aimed at broadening their experience by performing different types of NSF audit work. In response to last year's employee survey, we began documenting and distributing the minutes of weekly senior audit manager meetings to ensure that issues of common concern and importance are regularly communicated to all audit staff. Together, these policies and procedures should ensure a more consistent approach to the conduct of audits.

In 2004, we developed measures to compare our actual accomplishments to specific performance objectives. In 2005, we compiled baseline data to

assist us in setting future performance and productivity targets. The baseline data is maintained in our KMS system and includes information such as milestones and scheduling, budgeted and actual hours, monetary and non-monetary recommendations, and the status of the resolution of those audit recommendations.

2. Enhance communication and collaboration between audit and investigation, ensuring that multi-disciplinary approaches are used, where appropriate, to address NSF issues.

- Share information about audit and investigative activities at OIG all-staff meetings.
- Finalize OIG policy on audit/investigative referrals; ensure its implementation.
- Continue to provide audit support for the contractual provision of audit services in support of investigative activities.
- Continue to meet regularly with investigators to discuss cross-cutting issues and means of identifying mutually beneficial issues of importance.

In 2005, the OA shared information on audit activities at all-staff meetings and continued to provide audit support for contractual audit services in support of investigative activities. In addition, OA contributed to the development of an OIG policy on audit and investigative referrals and continued to meet with investigators formally and informally to discuss issues of mutual interest and the status of work resulting from both investigative and audit referrals.

3. Strengthen our focus by refining our approaches for selecting work and setting priorities.

- Implement the Office of Audit planning policy for audits.
- Create permanent files of information gathered during audit planning efforts.
- Finalize automated audit report trend analysis process; upload historic audit report data into KMS; develop standard trend analysis reports.
- Develop a process for conducting future automated trend analysis.
- Continue to refine our Agency funding analysis by standardizing

techniques and data reports obtained annually for use in assessing risk of NSF's award portfolio.

OA finalized an audit planning guide to establish a formal methodology for analyzing and assessing risk, and developing and ranking audit proposals based on those assessments. We then select audits to perform based on their priority, their technical requirements, and the availability of requisite staff. This new process was used for the first time in the development of the FY 2005 Annual Audit Plan. The Plan was completed on schedule and presented to the National Science Board at its October 2004 meeting.

Over the past 12 months, we continued to upgrade an automated process for conducting trend analysis of historic audit data. Currently, all audit findings are coded according to type of finding, cost category (e.g., payroll, travel, equipment), and finding condition when entered in KMS. Categorizing past findings helps inform our audit planning process and facilitates the measuring and reporting of audit issues. We continued to use KMS to track audit milestones and the time staff devote to each audit so that future audits are based on realistic estimates of the staffing resources that will be needed to complete them. In last year's audit planning cycle, we created permanent files of past and present audit proposals and added an appendix to our planning guide that provides links to on-line sources of audit planning information. Together, these efforts should ensure a more robust and efficient audit planning process.

#### 4. Perform outreach regarding effectiveness and efficiency issues.

- Document execution of outreach policy in KMS outreach and time-tracking modules.
- Create a library of information gathered from our outreach efforts (e.g., testimony, minutes of meetings with NSF officials or advisory committee meetings) and make use of this information during the audit planning process.

The outreach plan developed by OA includes three strategies: 1) gaining a better understanding of NSF activities and operations; 2) monitoring audit-related changes in the professional audit and OIG communities; and 3) educating NSF, its stakeholders, and the external community on our audit issues and activities. In 2005, OA staff members were invited to speak at an NSF-sponsored regional grants conference and a conference of university research administrators. Staff also participated in several NSF-sponsored program manager seminars to learn more about NSF's many programs, explain the OIG's role and responsibilities to the new program officers, and to

act as resource advisors, providing a ready contact within OIG. OA staff were involved in a number of federal community initiatives aimed at solving problems related to improper payments, Single Audit quality, federal financial statements and IT security, and grant oversight. OA participates in the OIG Liaison Program, which communicates information about OIG activities and reports to senior agency managers, allows a constructive discussion of NSF and OIG concerns, and provides a point of contact should they wish to communicate further with OIG. We documented these and other outreach efforts in the KMS outreach module and while we did not create a library of information gathered from our outreach efforts, the information gathered during these activities was formally communicated to staff at our monthly “all-hands” meeting.

## Goal 2: Safeguard the Integrity of NSF Programs and Resources

### 1. Identify ways to improve case product quality and timeliness.

- Ensure investigations are consistent with PCIE/ECIE quality standards for investigations.
- Ensure consistency of investigative efforts with Investigations Manual.
- Make high-quality oral and written presentations to prosecutors or agency decision makers.
- Assess timeliness and appropriateness of case milestones.
- Ensure high-quality referral of audit issues arising from investigations.
- Maintain high-quality training for investigators.
- Assess results-based performance measures for applicability to OIG investigations activities in 2004.
- Perform a quality check for each investigation.

The Office of Investigations (OI) successfully employed the strategies described above to meet the goal of improving case quality and timeliness. We continued our co-leadership role in preparing the Executive Council on Integrity and Efficiency (ECIE) community for investigative peer review. NSF OIG was the first ECIE investigations office to undergo peer review based on the new PCIE/ECIE quality standards for investigations. The review concluded that OI was in full compliance with the applicable investigative standards. We implemented improvements in our training system and file security suggested by the review team. In our continuing effort to refine and improve our processes, we modified several sections of our Investigations Manual.

Each investigative case was subjected to both quality control and quality assurance reviews to ensure that 1) they were performed in accordance with our Investigations Manual, and 2) each Report of Investigation or Management Implication Report addressed the relevant elements. These reviews also verified that cases with underlying audit issues were referred to the OA for audit consideration. Several referrals were subsequently included in the audit plan. We successfully completed site visits related to both research misconduct and criminal/civil cases and increased the number of cases referred to the Department of Justice for prosecution or to NSF management for adjudication. Included among these cases, was the first resolution of an investigation by means of a Settlement Agreement and Compliance Plan cosigned by the agency, OIG, and the subject institution. We worked closely with our contract forensic auditors to make certain that accurate and complete financial information was identified, analyzed, and incorporated into the investigative product. These efforts have significantly increased our abilities to detect fraud and to successfully present cases for prosecution to the Department of Justice.

Each case was monitored for timely completion through the milestones in OIG's KMS. Several new milestones were added to the system this year, and others were modified to improve our tracking capability and assist in the development of new procedures for tracking case processing statistics by individual investigator. These statistics will form the basis for producing meaningful results-based performance measures.

At the beginning of this performance year, we ensured that all members of OI completed an Individual Development Plan and we worked throughout the year to meet both individual and group training objectives to increase both individual and office-wide skill levels. We have implemented an electronic mechanism for tracking planned and completed training to make our efforts more efficient. We continue to survey staff participating in training and other OI offices to ensure our training is of the highest quality available.

## 2. Strengthen proactive activities (outreach, reviews) in integrity matters.

- Ensure information is accessible to public and NSF.
- Ensure materials are accurate and up-to-date.
- Develop elements of a Compliance program.
- Emphasize OIG liaison activity.
- Convene one Grant Fraud Working Group meeting.

- Analyze closed cases to assess areas for proactive reviews.
- Monitor and assess the effect of proactive activities on case processing time, priorities, and allegation assessment.
- Ensure all FOIA/PA requests are responded to in a timely manner.

The Inspector General Act identifies the detection and prevention of fraud and abuse as primary responsibilities of an Office of Inspector General. In response to this charge, we conduct proactive investigative reviews as time permits and have an active outreach program to NSF and the communities it serves. Through the use of OIG's web site, we made current and relevant information available to our various audiences, including NSF staff, the National Science Board, the Congress, and the research community at large. We also provide information to the public in response to Freedom of Information Act requests. This year we again responded to each request within the time requirements identified in the statute, and we ensured timely responses by modifying our electronic tracking system.

We participated in numerous NSF events such as program management seminars, conflict of interest briefings, and regional grants seminars, sending knowledgeable OIG representatives to discuss issues of interest and answer questions. OIG staff members were also assigned as liaisons to NSF offices to ensure good communication between OIG and the agency's directorates. A survey to determine the effectiveness of OIG liaison efforts indicated that the content, format, and frequency of liaison events were appropriate and well received, and that NSF managers were comfortable communicating with OIG liaisons.

We conducted the second annual Grant Fraud Investigation's Training Program for PCIE/ECIE investigators, which was attended by 80 staff from the IG community. Ten representatives from six IG offices gave presentations that focused on case studies of successful grant fraud investigations and prosecutions. Our survey of participants indicated that they found the workshop extremely useful both for the information that was shared and for the strengthening of professional networks. The workshops have become so popular that we are working with the Inspector General Criminal Investigator Academy to accommodate all who want to attend.

This year, we expanded our efforts to develop and disseminate information about effective compliance programs. For example, we introduced new presentations at professional meetings on compliance programs based on the United States Sentencing Commission Federal Sentencing Guidelines, and we developed a new poster that was displayed at a recent National Science

Board Meeting. The poster will also be exhibited at professional meetings to prompt discussion about the use of compliance plans in the resolution of particular cases. We made effective use of our compliance initiative to resolve a significant case with the execution of a Settlement Agreement and Compliance Plan.

Our efforts to conduct proactive reviews this year were curtailed because we experienced a significant increase in both the number and complexity of allegations. We did not have adequate resources to devote to this important task or to complete a planned data-mining project. Nevertheless we are in the final stages of completing three proactive reviews initiated in previous years that are likely to result in recommendations to NSF for management improvements.

### **Goal 3: Utilize OIG Resources Effectively and Efficiently**

#### 1. Utilize professional expertise and talents of all OIG staff.

- Conduct annual survey of OIG staff to obtain its views on the effectiveness of:
  - OIG use of its resources in personnel, equipment, technology and contracting,
  - Management planning, policies, and procedures,
  - Internal communications and coordination, and
  - OIG impact on NSF.
- Analyze survey results and develop corrective actions for the problems identified.
- Continue the use of the team approach in brainstorming and resolving OIG internal management issues and in developing OIG activities.
- Complete development of an integrated Knowledge Management System within the OIG.
- Develop in-house technical expertise for maintaining KMS.
- Complete a KMS users manual for OIG staff.

Approximately 70 percent of OIG staff responded to the annual employee survey this year, the most ever. We view this survey as an effective means for measuring how well we are using the staff's professional expertise and whether we are providing our employees with the guidance and resources needed to

do their jobs. Although there is still room for improvement in some areas, overall ratings increased by about five percentage points from last year. More importantly, some of the areas that earlier surveys had indicated were significant problems received considerably higher ratings. The most improvement occurred in issues related to cooperation among OIG units, the utilization of contractors, and communications between the various units within OIG. We believe that the progress is due at least in part to a concerted effort by the office to address these issues. We used the annual OIG retreat and other all-hands meetings to help define the issues, reach a common understanding, and achieve a consensus on actions to improve our performance. Specific areas in which the staff perceived relatively high OIG effectiveness included technology support within the office, OIG's impact in helping to solve important agency problems, the guidance provided in OIG policies and procedures, the utilization of OIG staff skills and abilities, communications within OIG for keeping staff informed, and the use of contractors by OIG.

OIG continued to make effective use of the team approach in internal management issues and in OIG activities. We used teams to assess the annual survey, organize the annual OIG retreat, advise on the development of internal OIG policies, and serve as OIG liaisons to the directorates and offices in NSF. Most investigations are conducted by teams composed of investigators, attorneys, scientists, and/or other appropriate OIG staff members. Ad hoc staff groups are often formed to produce briefings, congressional testimony, or special reports, and as indicated above, most audits are conducted using a team-based auditing approach.

The integrated KMS made significant strides during the past year, but some problems persisted and we fell short of our goal to finish its development. In many cases, as more staff members became regular users, we identified additional functions or enhancements to build into the system to make it more robust in meeting OIG data management and tracking needs. The additional demands on the system, particularly during the semiannual reporting period, created processing delays and other technological issues that need to be resolved. KMS has advanced our data analysis beyond the disaggregated and obsolete stovepipe systems it replaced and we are continuing to refine it. This year's enhancements included modules for managing FOIA requests, individual development plans, and OIG subpoenas, as well as strengthening the modules for managing and tracking audits, investigations, referrals, training, outreach, and other activities. We hired a second IT specialist for the office, and his primary responsibility is to develop in-house expertise for administering and maintaining KMS. We completed KMS users' manuals for investigators and auditors, who represent the bulk of the system's users.

## 2. Strengthen staff recruitment, development, and training.

- Assess results of pilot test for an office-wide process for individual development plans and establish a permanent IDP process within OIG.
- Ensure that all OIG staff meet OIG training requirements.
- Revise individual performance appraisal forms to link the critical elements to the OIG Performance Plan.
- Update auditor and management analyst position descriptions.
- Develop a core audit training program and core audit competencies.

We evaluated the results of an office-wide pilot test of individual development plans and decided to implement them on a permanent basis. They are now synchronized with the annual performance appraisal process for OIG employees. All office staff members met or exceeded OIG's annual training requirements, and we revised the employee appraisal forms to link them more closely to the OIG Performance Plan. We also worked with NSF to modify our SES appraisal forms to conform to new OPM requirements. We achieved a provisional certification for this year, and we have further revised the appraisals for resubmission to OPM for permanent certification. Finally a team from OA is reviewing core audit competencies that will serve as a foundation for developing an audit training regimen, and updated position descriptions.

## 3. Improve communication and collaboration within OIG.

- Develop an intra-office referral policy.
- Provide timely information exchange and referrals between the audit and investigation units.
- Share information about audit and investigative activities at all-staff meetings.

We formed a committee with representatives from all the units and drafted a policy to improve coordination, informal consultations, and referrals within the office. The policy was approved by senior management and issued in October 2004. We believe that it has been instrumental, along with other actions taken within the office, in improving the working relations among our units and fostering an environment conducive to sharing information and

expertise, referring matters that may be of interest to another unit, and working more collaboratively on issues that concern more than one unit. Feedback from the OIG employee survey indicates that the relationships between investigators and auditors, in particular, have continued to improve. At almost all our monthly all-hands meetings, either investigators, auditors or administrative staff discuss a significant project. These exchanges have been effective in improving mutual understanding of the roles and concerns of each of the various units.

#### 4. Ensure effective external communications and consultation.

- Produce timely external reports on OIG results and issues.
- Provide testimony and other requested information to congressional committees.
- Provide briefings to consult with the NSB, Congress, OMB, NSF, and others regarding OIG plans, priorities, and progress.
- Issue two OIG newsletters by e-mail.
- Update NSF leadership regularly on OIG activities and concerns.
- Collaborate with federal and international agencies to advance common audit, investigative, and management goals.
- Provide leadership and active participation in the IG community.

The OIG's Semiannual Reports to the Congress, budget submissions to the Office of Management and Budget and to the Congress, Management Letter to NSF, annual Performance Report, and Management Challenges Letter were designed to produce timely information on OIG findings and concerns to key stakeholders. We also issued two electronic OIG Newsletters to a broad audience in the federal government and research communities. The IG testified before the House of Representatives Committee on Science Subcommittee on Research and provided all information requested by committee members and staff. Her testimony focused on investigative and audit activities, as well as significant management challenges facing NSF. Our staff presented regular briefings on OIG activities to the Audit and Oversight Committee of the National Science Board. The subjects included the results of the annual audit of NSF's financial statements, the findings and recommendations of several performance audits, and the OIG budget submission. The Inspector General and Deputy Inspector General regularly briefed the NSF Director and Deputy

Director on recent, ongoing, and planned OIG activities, as well as other matters concerning the management and operations of the agency.

As part of our continuing efforts to prevent and detect fraud, waste, and abuse, we regularly reached out to domestic and international communities to inform them both about our work and about their responsibilities in ensuring the integrity and effectiveness of research activities. Our office played a leadership role in establishing a dialog among international officials engaged in research compliance. The Inspector General co-hosted a workshop, Accountability in Science Research Funding, with the Director General of the Science Foundation Ireland, in Dublin, Ireland, in June 2004. The purpose of the meetings, which were attended by representatives from 14 countries, was to discuss methods for monitoring and auditing science and engineering projects and to share best practices among the participating organizations. Our Associate Inspector General for Investigations was a keynote speaker at a meeting of the Australian Research Management Society in Australia, where she discussed establishing compliance programs as a means to correct problems found during the course of investigations.

OIG staff members were also invited to speak at a wide range of conferences held by institutions and associations and participated on several federal committees and task forces, including the Office of Management and Budget (OMB) directed Federal Workgroup on Erroneous/Improper Payments. As the primary attendee from the IG community, the NSF OIG representative provided a perspective on what actions the IG community is planning to take on evaluating agency actions to comply with this Act. We also worked closely with other OIGs and federal agencies on joint investigations, and our investigators provided briefings to the IG community following our successful resolution of a case involving federal travel card abuse, which has been a widespread problem in the federal government.

We attended the first meeting of the Research Business Models working group on subrecipient monitoring, sponsored by the National Science and Technology Council's Committee on Science. The group is evaluating current federal guidance on subrecipient monitoring contained in OMB Circular A-133 and ways to simplify or eliminate procedures for overseeing grant funds passed through to other organizations. NSF OIG has also played a leading role in an Executive Council on Integrity and Efficiency (ECIE) working group that is developing investigative peer reviews. OIG staff also participated in updating the five-year PCIE/ECIE Strategic Framework. We continued to work with other federal agencies and OIGs as they implemented policies and procedures for investigating allegations of research misconduct. As Chairperson of the PCIE/ECIE Misconduct in Research Working Group, the NSF Inspector General led efforts to educate the community about this issue.

# Audits & Reviews

To view reports in their entirety, please visit  
[www.inside.nsf.gov/oig/start.htm](http://www.inside.nsf.gov/oig/start.htm).

## Significant Reports

The following audit reports issued in the past six months contribute additional information about the challenges NSF faces in improving its post-award monitoring program, and underscore the need for prompt action on the part of the agency. Though different in many respects, most of the problems cited below would be mitigated if more attention were given to post-award administration.

An effective post-award monitoring program should ensure that: awardees are complying with award terms and conditions and federal regulations; adequate progress is being made toward achieving the objectives and milestones of the funded research project and; awardee expenditures listed on NSF's financial statements represent costs that are accurate and allowable. While NSF has taken some steps over the past three years toward establishing a risk-based program for post-award monitoring of its grants, the audits discussed below suggest that more needs to be done.

### ***Fiscal Year 2004 Independent Auditors Issue Unqualified Opinion, Recognize Need for Improved Award Oversight***

In accordance with the Chief Financial Officer's Act of 1990, KPMG LLP conducted an audit of NSF's financial statements for Fiscal Year (FY) 2004 and issued another unqualified opinion to NSF. However, the auditors identified post-award monitoring as a reportable condition for the fourth consecutive year. The

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auditors also identified a second reportable condition on NSF's monitoring of its largest contractors.

NSF funds over 10,000 new awards annually. At any point in time, NSF is administering as many as 30,000 ongoing awards amounting to more than \$5 billion to support basic science and engineering research and education. Assessing scientific progress and ensuring effective financial and administrative oversight of these funds are critical elements in managing NSF's award programs. However, in FY 2004 the auditors found that NSF must broaden its approach to award monitoring. Specifically: (1) NSF's current risk model for focusing its monitoring efforts does not adequately capture all high-risk awardees; (2) NSF's award-monitoring program does not address procedures for both baseline and advanced monitoring depending on the financial risk of the award; (3) NSF needs to provide a detailed response to suggestions included in the report: *Post Award Monitoring Assessment* prepared by a consultant under contract to the agency; and (4) NSF needs to increase the resources dedicated to its post-award monitoring efforts.

The independent auditor identified similar problems with NSF's process of monitoring the financial performance of its largest contractors who receive advance payments. The auditors found that: (1) NSF does not adequately review the public vouchers submitted by the contractors who receive advance payments to ensure that the reported expenditures are proper and allowable under the contracts; and (2) the contractors did not certify the public vouchers as representing valid and authorized expenditures under the contract. Without adequately performing such procedures, misstatements and unauthorized expenditures of substantial amounts may go undetected. In FY 2004, NSF acquired approximately \$388 million in goods and services through outside vendors, including an estimated \$192 million or 57 percent paid through advance payments to NSF's three largest contractors for logistical and support services for polar and ocean research.

In February, NSF submitted its proposed action plans to address the six recommendations related to these reportable conditions. Unfortunately the auditors could not accept NSF's proposed corrective actions for five recommendations because in general they did not identify specific deliverables nor provide expected completion dates. One set of corrective actions aimed at improving NSF's risk-assessment process contained enough specifics to be accepted. The OIG and the independent auditor will continue working with NSF management to ensure these issues are resolved in a timely manner.

## **\$33 Million in Raytheon Polar Services Company Costs Questioned**

At NSF's request, the OIG contracted with the Defense Contract Audit Agency (DCAA), to complete an audit of Raytheon Polar Services Company (RPSC) that was discussed in an earlier Semiannual Report.<sup>1</sup> The auditors added \$4 million in unsupported costs over what was previously reported, bringing total questioned costs to \$33.4 million, or 9.2 percent of the \$363 million total costs claimed by the contractor for the three year period ending December 31, 2002.

Raytheon Polar Services is NSF's primary support contractor for the United States Antarctic Program, providing logistics and support services valued at approximately \$1.172 billion over ten years. DCAA had previously identified \$29.2 million in improperly billed indirect costs in its interim report issued in September 2004. In completing its audit, DCAA questioned an additional \$4 million of direct costs and \$52,000 of miscellaneous costs, mostly related to the handling of a petty cash fund located in New Zealand, because RPSC did not have documentation to show how the costs were allowable or benefited the NSF contract.



**A worker at Admundsen-Scott South Pole station waves goodbye to an LC-130 aircraft as it departs with approximately 35 employees who had “wintered over” at the bottom of the world. NSF/USAP Photo by Mark Buckley, RPSC (2001).**

We recommended that NSF disallow these questioned costs and ensure that Raytheon accurately classifies and records future overhead and general and administrative costs in its accounting system. NSF also needs to ensure that Raytheon establishes policies and procedures to: (1) preclude charges over indirect cost ceilings; (2) routinely adjust claimed fringe benefit costs to reflect actual costs rather than budgeted; (3) maintain adequate documentation for claimed costs. These actions will ensure that any costs paid for the U.S. Antarctic Program are proper and accurate. NSF states that they are reviewing the recommendations.

<sup>1</sup> September 2004 Semiannual Report to Congress, p. 15

## ***Increased Commitment to Large Facility Project Management Needed***

A survey of NSF's Large Facility Project (LFP) Office found that progress toward issuing project management guidance and providing oversight of current large facility projects has been slow, constrained by workload and staffing issues. NSF established the LFP Office in 2003 to address Congressional concerns and Office of Inspector General audit recommendations regarding NSF's management and oversight of its portfolio of large facility projects. These projects represent a substantial portion of NSF's research portfolio and range from tens to hundreds of millions each. While the LFP Office has made some progress, NSF has not provided it with the appropriate institutional authority and staff resources necessary to accomplish its intended oversight responsibility.

The LFP Office needs a high-level champion, such as the NSF Director, to ensure organizational authority, and dedicated resources specific to the Office's oversight responsibilities. Further, the Office needs a more structured management approach that includes a formal mission statement, specific goals and measures, and a realistic staffing plan. Continued delay in addressing large facility management puts NSF's sizeable investments in these important projects, and taxpayer dollars, at risk of potential mismanagement and waste.

## ***Many Required Project Reports Late or Missing***

In another audit report that suggests opportunities for NSF to improve its post-award administration activities, OIG auditors found that over a 5-year period, approximately 47 percent of the 151,000 final and annual reports required by the terms and conditions of NSF's grants and cooperative agreements were submitted late or not at all. Of the 43,000 *final* project reports, 8 percent were never submitted, and 53 percent were submitted, on average, 5 months late. Of the 108,000 *annual* progress reports, 42 percent were never submitted. NSF collects information on the progress and results of the awards it funds through these reports. They provide NSF with important information while helping to enhance accountability for these federal funds.

Furthermore, although NSF has a policy that prohibits principal investigators who have not submitted final project reports in the past from receiving new awards, in 74 of 571 (13%) occurrences over the past 5 years NSF provided delinquent PIs new award funding. In 29 of these occurrences, it was not clear whether the automated system had failed or whether the system's controls had been manually overridden to allow new funding.

We recommended that NSF continue its plans to develop report tracking and automated reminder systems to assist its awardees in submitting project reports on time. Additionally, NSF should emphasize the importance of these reports to awardees and monitor its automated award system to ensure manual overrides occur only with written authorization and documentation. NSF generally agreed with the recommendations and plans to have its corrective actions implemented by July 2006.

### ***Conditions for International Grant Omitted from Agreements***

An audit of awards made by NSF and NASA, EPA, and USDA to establish an endowment fund for the United States-Mexico Foundation for Science (USMFS) found that conditions for the funding stipulated by Congress were not included in the grant agreements. Consequently, the USMFS did not obtain \$5 million or 45 percent of matching endowment contributions from Mexico or implement adequate financial controls to account for and administer almost \$11 million of U.S. endowment funds.

Of the total \$11 million of U.S. contributions, Mexico essentially matched NSF's contribution of \$4 million along with some contributions made by other agencies; however, Mexico has not matched the remaining \$5 million of U.S. funding, primarily from the other three agencies. While NSF's initial funding arrangement for the USMFS pre-dated the congressionally stipulated conditions, NSF did not amend the agreement when Congress approved the funding conditions and provided NSF with additional funds for USMFS. This occurred because the legislative requirements were not communicated to grant and program officials for inclusion in the award agreements. Further, as a new, foreign-based awardee, the USMFS did not fully understand its responsibilities related to complying with US grant provisions.

We recommended that as the largest U.S. contributor, NSF bring these concerns to the attention of the President's Office of Science and Technology Policy (OSTP) in order to facilitate a coordinated U.S. effort to secure corrective actions on the part of the USMFS. While NSF responded favorably to the audit report, it does not agree that it should take a leading role in coordinating corrective actions for the entire U.S. Government since it has no legal responsibility for oversight of other U.S. agencies. Nevertheless, NSF does generally agree to implement the remaining audit recommendations to secure at the USMFS, improved financial controls over NSF's contributions. OSTP is currently considering the audit recommendations.

## ***University's Research Program Outgrows Grant Administration***

An audit of the University of South Dakota (USD) found that USD filed late and sometimes inaccurate annual reports, inadequately managed some subawards and subcontracts, and charged \$142,593 of questioned costs and cost sharing to NSF grants. Our review of an annual report filed by USD found that the University overstated the level of effort staff contributed to that project, the extent of technical progress and accomplishments that had been achieved, and understated the difficulties the project faced in meeting its intended objectives. Concerning USD's management of subawards, we found that work began before agreements were formalized, statements of work were unclear, and several subrecipients did not submit all required reports.

Many of USD's problems occurred because the resources allocated for grant administration did not keep pace with the growth of its research program, which doubled between FY 1998 and 2003. Also, USD did not have an adequate understanding of its indirect cost rate structure and did not have a formal policy or process to determine and appropriately classify direct and indirect costs. During the audit, USD took steps to correct some of these concerns. The University generally agreed with the findings related to late annual reporting and management of subawards, but disputed most of the questioned costs and cost sharing. Based on the information provided by this audit NSF declined to exercise option years four and five on one of the grants, allowing for \$620,020 of NSF funds to be redirected to other programs by the Directorate for Computer and Information Science and Engineering. The audit report was provided to NSF's Division of Institution and Award Support for audit resolution.

## ***Production Company Financial Systems are Found Inadequate***

Auditors questioned \$921,489 or 34 percent of total claimed costs for two awards given to the production company ScienCentral Inc. (SCI), and a closely related non-profit organization, The Center for Science in the Media (CSMI) because they did not have adequate financial systems to account for its NSF funded expenses and cost sharing claimed on NSF awards. In addition, CSMI did not have the required OMB Circular A-133 audits for its fiscal years 2000 and 2001. OIG recommended that NSF recognize SCI and CSMI as high-risk awardees and not grant them new funds until the organizations implemented adequate accounting systems and controls to effectively administer and monitor their NSF awards. In response to the audit

report, SCI and CSMI management identified a number of actions they have already taken to improve the financial management system and to support some of the questioned costs.

### ***\$6.8 Million in Cost Sharing Required of School District is Questioned***

OIG audited the financial report submitted by Fresno Unified School District (FUSD) in California for the five-year period ending August 31, 2000 as part of our ongoing review of awardees under NSF's Urban Systemic Program and Urban Systemic Initiative (USP/USI). While the school district was able to support the \$15 million of NSF funded costs claimed under the award, it lacked sufficient and adequate records to evidence meeting its \$17.5 million in cost sharing commitments. As a result of this material weakness, we questioned \$6.8 million of NSF's share of total project costs.

Over \$220,000 of indirect costs were also questioned because the awardee did not accurately calculate or consistently charge its indirect cost rate. \$5.1 million in claimed salary, wage and fringe benefit costs *would* have been questioned had the auditors not performed additional verification procedures at the government's expense, because the school district did not maintain the required supporting documentation. FUSD officials stated that as a first-time NSF award recipient, they were not aware of the accounting and documentation requirements for NSF awards. They indicated that they have taken actions to address the internal control and compliance findings and recommendations in the report.

NSF should direct FUSD to develop and implement a financial management system and adequate procedures to effectively administer and monitor NSF funds. These steps should include: (1) implementing proper systems to identify, track, and report cost sharing and participant support costs, (2) providing training to appropriate personnel to properly calculate indirect costs, and (3) ensuring that employees maintain the proper documentation to support salary and wage charges in compliance with federal and NSF requirements. The audit report was forwarded to NSF's Division of Institution and Award Support for audit resolution.

### ***Grant Management at Community Colleges Need Improvement***

In our on-going assessment of grants management at community colleges, two additional audits have been completed. Like the prior audits,

these community colleges also have grant accounting control weaknesses, especially in the areas related to labor activity reporting, cost sharing, subawards, and consultant costs.

Springfield Technical Community College (STCC) claimed questionable and inadequately supported cost sharing and could not provide documentation to support the claim that consultant costs benefited the NSF award. In total, we questioned \$230,133 of the \$2,945,325 costs claimed on this award that was intended to increase the number of trainees in the telecommunications industry.

Similarly, an audit of Texas State Technical College – West Texas (TSTC) identified material deficiencies in the College's financial controls over labor activity reporting and cost sharing. Among the costs questioned was \$24,745 of salaries and related fringe benefits, which the College claimed for work that had not yet been performed. The College was also unable to locate 81 percent of the employee activity reports, representing approximately \$650,000, or over 50 percent of the total \$1.25 million costs TSTC claimed on the NSF award. OIG also found that TSTC: 1) lacked a system to track, record, and monitor its required cost sharing; 2) did not obtain financial disclosure statements from investigators working on the NSF award; and 3) did not prepare contractual agreements with all of its consultants, which could have jeopardized TSTC's ability to meet its programmatic objectives and comply with federal and NSF requirements. TSTC officials stated that these problems occurred because the project director of the award had received little or no oversight from other responsible TSTC officials.

Officials at both STCC and TSTC West Texas agreed with the internal control and compliance findings and recommendations and reported that they have implemented corrective actions. Both audit reports were forwarded to NSF's Division of Institution and Award Support for audit resolution.

## Other Reports

### *FY 2004 FISMA Information Systems Reports*

During this semiannual period OIG issued the FY 2004 Federal Information Security Management Act (FISMA) Independent Evaluation Report and the FY 2004 FISMA Evaluation Summary Report. The report states that NSF has an established information security program and has been proactive in reviewing security controls and identifying areas to strengthen this program. However, the report identified one reportable

condition concerning the need to strengthen the information security program at NSF's contractor-operated facilities supporting Antarctic operations. Four other less significant weaknesses were also identified. Management agreed with the findings and recommendations in these reports and indicated that, in many instances, it has already initiated corrective action.

## **National Science Board's Compliance with Sunshine Act**

At the request of Congress, OIG conducts an annual review of the National Science Board's compliance with the Sunshine Act. In 2004, the Board again demonstrated a clear intent to provide for greater access to and increased openness in its meetings, and properly closed meetings consistent with the exemptions contained in the Sunshine Act. However, as the Board is continuing to develop the formal policies and procedures recommended in last year's audit, it again experienced challenges in meeting some of the many procedural requirements of the Sunshine Act. For example, while the Board for the most part provided timely public announcement of its regular schedule, it met this requirement only 33 percent of the time for its *ad hoc* meetings. The Board should implement formal guidance for handling such *ad hoc* meetings and ensure that its members and staff are familiar with it.

To provide needed structure and protocol and to ensure greater consistency and accountability in complying with Sunshine Act requirements, the NSB needs to complete its plans to develop, implement, and provide training on formal policies and procedures on Sunshine Act requirements. The Board expects to implement this guidance during the first half of 2005.

## **A-133 Audit Reports**

The Single Audit Act of 1984 (Public Law 98-502) and the Single Audit Act amendments of 1996 (Public Law 104-156) established uniform requirements for audits of non-federal entities receiving federal awards. Under the Act, non-federal entities that expend \$500,000 or more a year in federal awards are required to have an organization-wide audit that includes the non-federal entity's financial statements and compliance with federal award requirements. OIG work with respect to A-133 audit reports is summarized below:

## Quality Control Review

During this reporting period, OIG conducted a quality control review of an audit performed by an accounting firm under the Single Audit Act. The review found that the firm's auditors did not address a \$31.7 million liability for postretirement health benefits and the related disclosure omitted from the grantee's financial statements. The seriousness of this auditing deficiency compelled us to refer the matter to the American Institute of Certified Public Accountants *Professional Ethics Division* for resolution. The AICPA is reviewing the matter and will advise us of their decision.

Additionally as part of the review, we found that the auditor did not report the grantee's non-compliance with federal property disposal requirements. Further, the auditors' work papers did not sufficiently document the internal control structure and audit steps used to test the grantee's compliance with federal requirements. Although the auditor disagreed with the findings related to the omitted liability and federal property disposal requirements, they agreed to improve the documentation of the internal control structure and audit steps taken to test compliance.

## Desk Reviews

After A-133 audit reports are submitted by the non-federal entities to the Federal Audit Clearinghouse, we conduct desk reviews of audits where NSF is the cognizant or oversight agency or the audit report identified findings specific to NSF awards. In this reporting period, we conducted desk reviews of 43 A-133 audit reports with NSF expenditures totaling \$319 million between fiscal years 2002 and 2004. For 21 of these A 133 audit reports, auditors found a total of 86 compliance and internal control findings related to NSF awards. The most common findings related to deficiencies in financial management and lack of adequate support for salary and wages. Auditors questioned \$561,615 of NSF award costs claimed by award recipients. Examples include \$240,232 in over charges for indirect costs at Clark Atlanta University, and \$290,262 of unsupported sub-recipient costs claimed by University of Puerto Rico. The following table summarizes findings found in the A-133 audit reports:

### Findings Related to NSF Awards by Category

Category of Cost, Income or Activity	Category of Finding			
	Compliance	Internal Controls	Monetary	Total
Financial Management	9	6	3	<b>18</b>
Salary/Wages	10			<b>10</b>
Award Management Requirement	9			<b>9</b>
Other Direct Costs	9			<b>9</b>
Sub-awards	7		1	<b>8</b>
Indirect Costs	5		1	<b>6</b>
Equipment	4			<b>4</b>
Other	17	4	1	<b>22</b>
<b>Total</b>	<b>70</b>	<b>10</b>	<b>6</b>	<b>86</b>

We also examined Management Letters accompanying A-133 audit reports. While management letters report less significant internal control deficiencies, these deficiencies can become more serious over time if not addressed. Twenty-one entities were issued Management Letters in this reporting period identifying internal control problems such as segregation of duties, adherence to allowable cost rules, and lack of procedures to mitigate fraud.

### Single Audit Quality Project Update

A-133 audit reports are essential to helping NSF fulfill its responsibility for monitoring the approximately \$5 billion of awards it funds annually. As previously reported, concerns raised by Quality Control Reviews (QCRs) conducted by a number of federal agencies have prompted the OIG community to conduct a government-wide project to assess and provide a baseline measurement of the quality of Single Audits. In November 2004, auditors participating in the project began conducting QCRs on a statistically representative sample of 208 A-133 audits submitted to the government.

Serving on both the Project Advisory Board and as part of the project management staff, the NSF OIG helped develop guidance material and training for auditors conducting the reviews, monitored on-going reviews, and examined completed QCRs. The NSF OIG plans to conduct two QCRs during the next semiannual reporting period. Given the importance of A-133 audit

quality to NSF's post-award administration, our office will continue to be involved in overseeing and reporting on the results of this government-wide Single Audit quality project.

## **Corrective Actions Prompted by Previous Audits**

### ***NSF and Foreign Awardee Improve Management of Grant Funds***

A prior audit of NSF awards worth \$16.4 million to the Inter-American Institute for Global Change Research (IAI) in Brazil, disclosed that NSF, on behalf of the United States, was funding a disproportionate share of the organization's total costs, and that the organization had not properly monitored 14 research subawards, valued at \$10.3 million<sup>2</sup>. Pursuant to the audit recommendations, NSF has reaffirmed, with the President's Office of Science and Technology Policy (OSTP) and the Department of State, the continued U.S. commitment for sustained funding of IAI research projects. Although the other 18 IAI member countries have not committed to providing any additional research contributions, both OSTP and NSF believe that engaging these countries in scientific assessments of global change issues remains a US priority and that the IAI serves as an effective means of encouraging international collaboration. Also, NSF has continued to work with IAI's governing body to increase the organization's efforts in the area of fundraising. IAI has been directed to develop a fundraising strategy document with established milestone dates.

The IAI is also improving its management of NSF grant funds, both for the organization's research projects and core operational expenditures. IAI is developing a Project Management Manual to establish clear written subaward policies and procedures for administering and monitoring NSF research funds passed-through to other institutions. The Institute is also in the process of hiring a new Director. NSF is working closely with IAI to implement these improvements and has informed IAI that additional research funding will not be approved until the Project Management Manual has been completed.

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<sup>2</sup> September 2004 Semiannual Report, p.17

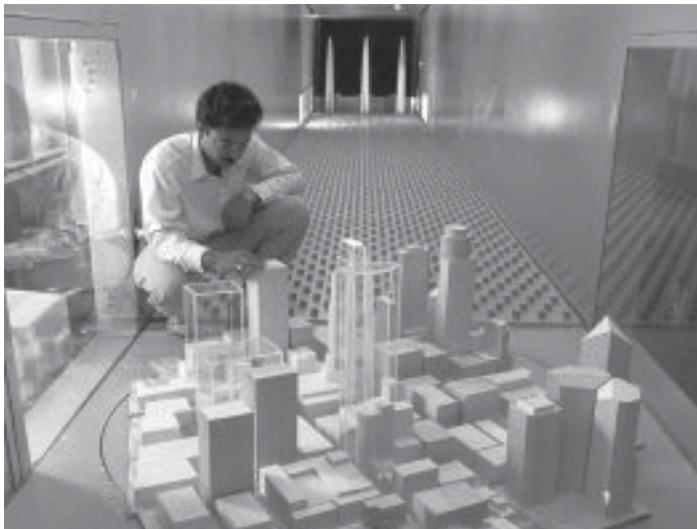
## Work in Process

### *Collection of Research Information*

Our office is currently conducting survey work on the effectiveness of NSF's methods of collecting, documenting, and analyzing the information resulting from the research it funds. This audit will also examine how other federal agencies that fund basic research collect research information, for the purpose of identifying good business practices.

### *Science and Technology Centers*

NSF's Office of Integrative Activities requested that OIG conduct audits of two Science and Technology Centers (STCs) that had recently undergone significant changes in leadership and management. Using information gained during our survey on the STC program and Center operations, we began audit work at two separate universities with STC awards. Because of their size and complexity, STCs contain more financial risk than most other NSF awards. Strong leadership is essential if an STC is to be successful in bringing talented researchers and students together to work on cutting-edge scientific issues.



**A model of downtown Minneapolis is prepared for testing in the boundary layer wind tunnel at the University of Minnesota's St. Anthony Falls Laboratory (SAFL). The test will study the effects of wind on structures. The SAFL was recently awarded a Science and Technology Center award. Courtesy Pat Swanson, St. Anthony Falls Laboratory, Univ. of Minnesota.**

## ***Retirement Benefits Paid by Awardees NSF's Large Facilities and Programs***

Our office initiated an audit to review the reasonableness of retirement benefits approved by NSF at five awardees managing some of NSF's largest facilities and programs. As part of the evaluation, we plan to compare the retirement benefits offered to workers at these facilities with those of other similar institutions. The liability for post retirement health benefits for NSF's facilities and programs is over \$85 million at these five awardees. The growing unfunded liability may have a major impact on future NSF budgets.

## ***Review of Thrift Savings Plan Catch-Up Contributions***

A review of all Thrift Savings Plan (TSP) catch-up contributions made by NSF employees in 2003 and 2004 was initiated because of concerns raised by employees over the accuracy of contribution data reported on employees' quarterly TSP statements. Catch-up contributions are supplemental tax-deferred contributions available to TSP (U.S. government employee retirement savings plan) participants age 50 or older who are already contributing the maximum amount for which they are eligible. To complete this review and ensure that TSP catch-up contributions withholdings from each employee's pay were properly transferred to their federal TSP account, we are working with staff from NSF's Division of Financial Management and the TSP to compare and analyze NSF payroll withholding data to the contribution data reflected in the TSP system. We expect to provide NSF with an analysis by employee of any errors found and issue the report in the next semiannual period.

# Investigations

## Civil and Criminal Investigations

### *School District Agrees to Settlement and Compliance Plan*

The investigation of an NSF award to a large city school district was resolved with the execution of settlement and compliance agreements and a \$150,000 reduction in a current award to the district. The case arose when OIG attempted to audit the district and identified a number of significant issues including the district's inability or unwillingness to provide adequate documentation to support the \$13.8 million in costs claimed and \$21 million in claimed cost sharing. The auditors were unable to express an opinion on claimed costs and cited material weaknesses in internal controls and non-compliance with federal requirements.

Because of the nature and scope of the problems identified, and the lack of cooperation it received, the Office of Audits referred the matter to the Office of Investigations. OIG subpoenaed relevant records from the district, which cooperated with the investigation. However, the district was not able to provide sufficient source documentation to contest most of the audit findings.

The district acknowledged numerous systemic weaknesses in its award management practices and voluntarily implemented corrective actions. After consulting with the United States Attorney's Office, and in coordination with NSF management, OIG determined that settlement of this case should include a plan

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### The Benefits of Compliance Programs

The use of compliance programs as part of the resolution of investigations of organizational misdeeds is increasing. Compliance plans have proven to be an effective means of strengthening internal controls, curbing misconduct, and changing the culture of organizations. Such programs also serve the interests of federal agencies in ensuring compliance with their regulations and policies.

According to the Department of Justice (DOJ):

“Corporations should not be treated leniently because of their artificial nature nor should they be subject to harsher treatment. Vigorous enforcement of the criminal laws against corporate wrongdoers, where appropriate results in great benefits for law enforcement and the public, particularly in the area of white-collar crime. Indicting corporations for wrongdoing enables the government to address and be a force for positive change of corporate culture, alter corporate behavior, and prevent, discover, and punish white-collar crime<sup>3</sup>.”

DOJ therefore actively promotes the implementation of compliance programs:

“Compliance programs are established by corporate management to prevent and to detect misconduct and to ensure that corporate activities are conducted in accordance with all applicable criminal and civil laws, regulations, and rules. The Department encourages such corporate self-policing, including voluntary disclosures to the government of any problems that a corporation discovers on its own<sup>4</sup>.”

The U.S. Sentencing Guidelines recognize the benefits of compliance programs, and when organizational criminal wrongdoing does occur, entities with compliance programs in place are accorded consideration by the Guidelines.<sup>5</sup> The Guidelines set out seven components for organizational compliance programs:

- (1) Establish standards and procedures to prevent and detect criminal conduct.
- (2) Managerial knowledge and specific responsibility for the content and operation of the compliance program.
- (3) Avoid employing personnel who have engaged in illegal activities or other misconduct.
- (4) Periodic training of personnel about the requirements of the compliance program.
- (5) Monitoring and auditing of the effectiveness of the compliance program; and establishing and publicizing a confidential, anonymous, risk-free whistleblower program.
- (6) Promotion of the program through incentives for success and disciplinary measures for failures.
- (7) Taking timely action when wrongdoing is detected, both reporting it and making appropriate modifications to the compliance program to avoid recurrence.

to ensure future compliance with federal requirements and to safeguard current and future funds awarded to the district. The compliance plan requires the district to form a compliance committee to oversee the implementation of procedures outlined in the agreement, and to report annually for five years to OIG. The settlement also resulted in the reduction of the district’s current award by a total of \$150,000.

### Former NSF Employee Convicted of Felony Not Debarred

Two years ago NSF’s former Travel Card Program Manager pled guilty to the willful and unlawful destruction of an official government record, a felony.<sup>6</sup> The manager misused her own government travel card on approximately four dozen occasions, and initially concealed her misuse from an OIG audit by deleting information from official agency records. Following an investigation that resulted in her conviction, the manager was sentenced to 20 weekends in jail, 2 years supervised probation, fined \$1,000, and permanently barred from all employment with the federal government.

Although her sentence prohibited the manager from serving as a government employee, there was nothing to prevent her from seeking private employment for a federal government contractor or subcontractor. In light of the seriousness of

<sup>3</sup> “Principles of Federal Prosecution of Business Organizations” (available at <http://www.usdoj.gov/dag/cff>) at 1.

<sup>4</sup> *Id.* at 8.

<sup>5</sup> U.S.S.G. §§ 8B2.1, 8C2.5(f), & 8D1.4(c)(1) (11/1/04).

<sup>6</sup> March 2004 Semiannual Report, p.23

her offense, and considering her senior and highly responsible position, OIG advised NSF that the federal interest would be best protected by prohibiting her from having any responsibility for federal funds by debarring her for a period of three years.

NSF declined to debar and explained that it “considered the fundamental policy set forth in the common debarment rule stating that debarment is not to be used as a punishment. Rather, the agency is to exercise its debarment authority in order to appropriately protect the federal Government’s interest. It is therefore relevant that your conviction is a felony and a matter of public record, and that you can no longer work as an employee of the federal government.”

The OIG disagrees with NSF’s view that the conviction of a felony as a matter of public record weighs against debarment, or that the ban on federal employment mandated by the criminal statute she violated should affect a debarment decision. To the contrary, crimes are designated as felonies because they are more serious, conviction of a felony is always a matter of public record, and conviction for “destruction of records” is an explicit independent ground for debarment in NSF’s debarment regulation. The OIG takes the destruction of official records seriously and expressed disappointment to NSF that it did not take administrative action in this case.

### ***NSF Suspends Owner of Small Business***

In response to an OIG recommendation, NSF suspended the owner of a small business who pled guilty to Mail Fraud and Tax Evasion, and his company, from participating in contracting with the federal government. A multi-agency investigation found that the owner submitted false reports to NSF and other federal agencies related to SBIR awards to the owner’s company, resulting in loss to the government estimated at \$1.4 million.<sup>7</sup> The owner has not yet been sentenced.

### ***University Implements New Policy for Charging Administrative Fees to Federal Awards***

The Office of Audits previously reported that a California university repaid \$1.3 million to NSF for inappropriately recovering administrative service costs above the maximum allowed under federal regulations.<sup>8</sup> The Office of Audits

<sup>7</sup> September 2004 Semiannual Report, p.25

<sup>8</sup> March 2004 Semiannual Report, p.19

referred the matter to the Office of Investigations to determine whether the university officials who charged such costs to NSF grants knew the charges were wrongful. Our investigation did not disclose any overt evidence of fraud on the part of university officials. Following the audit and subsequent investigation, the university implemented a new policy concerning the charging of administrative fees that complies with federal regulations. The university also committed to training its staff to ensure that the new policy is understood and followed. The audit was forwarded to NSF for resolution and it has recovered the full amount.

## ***Two Employees Misuse Government Computers***

In two similar but unrelated incidents, NSF officials notified our office that files containing sexual material had been discovered on the agency's computer network. Our investigation revealed that, in both incidents, the employees used NSF computers and internet access to visit adult web sites and download sexually explicit photographs and videos. The files were maintained on the NSF computers used by the individuals as well as on NSF network drives. Both individuals forwarded some of these files to others via email. Additionally, one of the individuals installed a peer-to-peer file-sharing program, in violation of NSF policy for agency computers, and used this program to download illegally a large number of copyrighted files.

In both cases we submitted our findings to NSF management for appropriate administrative action. At the time of this report, one of the individuals has been terminated, and the other case is pending adjudication. Our office is also working closely with NSF to conduct a proactive review of employees' use of agency computers and electronic resources to determine if the actions identified during our investigations are isolated incidents or indicative of a larger problem of employees abusing government resources.

## **Administrative Investigations**

### ***Actions by the Deputy Director***

#### **Proposal Author Commits Plagiarism**

Last year, OIG recommended a finding against an author of a proposal that contained text copied from multiple papers.<sup>9</sup> NSF's Deputy Director (DD)

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<sup>9</sup> September 2004 Semiannual Report, p.30

concluded the author, who was neither the PI nor co-PI, committed plagiarism. The DD issued a finding of research misconduct against the author and required that the author's university provide written assurance for a period of two years that any proposal submitted to NSF by the author adheres to rules of scholarship and attribution.

We sent the PI listed on the proposal a letter stating that, although she did not personally commit research misconduct, we agreed with her university that she failed to meet her responsibilities as PI by not thoroughly reviewing the proposal before it was submitted. As a result of our recommendations in this case, NSF changed its Grant Proposal Guide to require that a proposal's authors, if not the PI or co-PI, be named and acknowledged.

## Deputy Director's Finding Upheld on Appeal

We previously discussed a finding by the DD of research misconduct in Pennsylvania in which the subject plagiarized from a confidential proposal and a published paper.<sup>10</sup> The subject appealed the DD's decision to NSF's Director, who upheld the DD's finding and actions.

## NSF Takes Action Against co-PI Who Plagiarized

In a previous report,<sup>11</sup> we discussed a case in which OIG recommended that NSF take action against a co-PI at a Michigan university who participated in plagiarizing a Research Experiences for Undergraduates (REU) proposal. Based on our investigation and recommendations, NSF made a finding of research misconduct and required, through November 2005, the subject's university to provide written assurance that any proposal the subject submits to NSF adhere to rules of scholarship and attribution. In addition, NSF prohibited him from serving as an NSF peer reviewer, advisor, or consultant for an 11-month period and required him to complete an ethics training course.

## PI Fabricates Publication Record

A PI who fabricated his publication record in two awarded NSF proposals, one of which was a prestigious Faculty Early Career Development (CAREER) award, was found to have committed research misconduct.<sup>12</sup> Based on OIG's investigation and recommendations, NSF made the finding and required that,

<sup>10</sup> March 2004 Semiannual Report, p.28; September 2004 Semiannual Report, p.28

<sup>11</sup> September 2004 Semiannual Report, p.30

<sup>12</sup> September 2004 Semiannual Report, p.29

for three years, the subject provide written certification and the subject's university provide written assurance that any document he submits to NSF adheres to rules of scholarship and attribution.

### **PI Plagiarized from Book and Paper**

Following OIG's recommendation, the DD found that a PI at a North Dakota university committed plagiarism in a proposal she submitted to NSF. OIG received an allegation that the PI copied material from the preface of a book into her proposal. In response to our questions about the copied text, the PI admitted she failed to properly distinguish the text, and identified additional text she had copied from a published paper. We referred the allegation of plagiarism to the PI's university for investigation.

Following its investigation, the university concluded that the PI plagiarized text from a book and a published paper into her proposal. It reprimanded the PI and took the following actions: 1) her proposals and manuscripts submitted for the rest of the year (2004) had to be reviewed and approved by her department head; 2) she must have a co-chair on all committees which she chairs for a period of 2 years; 3) she must make one or two presentations annually as part of the graduate assistant ethics training course for the duration of her employment at the university; 4) she must undergo formal training in research ethics at her own expense; 5) her salary adjustment for FY 05 will be 1% instead of 3%; and 6) a letter of reprimand was placed permanently in her personnel file.

We agreed with the university's conclusion and recommended that NSF send a letter of reprimand to the subject informing her she has been found to have committed research misconduct. Considering the relative seriousness of the PI's misconduct, and the actions taken by the university, we did not recommend that NSF take additional action against the PI. The DD followed our recommendations.

### ***Reports Forwarded to the Deputy Director***

#### **Graduate Student Fabricates Data**

A California university notified OIG that it was investigating an allegation that a graduate student fabricated data that found its way into proposals submitted to NSF and the National Institutes of Health (NIH). The graduate student provided the data to her advisor who unknowingly used it as the basis for a manuscript submitted for publication and both proposals.

The university's investigation indicated that the advisor suspected that the graduate student fabricated the results and asked the subject for the raw data. However, the student declined requests for the raw data from both the advisor and the investigations committee. She claimed that she gave her data to an unnamed undergraduate who analyzed it and emailed her the results. The student refused to identify the perpetrator, and instead provided an email alleged to be from the undergraduate stating that she had falsified the analyses and she was sorry. The university concluded that the student created a fictitious person to hide the fact that she was responsible for falsifying the results. It found that the subject committed research misconduct and dismissed her from the university.

OIG opened its own investigation and coordinated efforts with the Office of Research Integrity (ORI), which handles allegations involving NIH proposals and refers matters to the Department of Health and Human Services (HHS) for adjudication. After several unsuccessful attempts to contact the subject and hear her story, we too concluded that the graduate student committed research misconduct. OIG recommended that NSF jointly resolve this case with HHS, and send a letter of reprimand to the graduate student informing her of the finding and debar her for 3 years. A final decision on this matter is pending.



**Dewan Kazi Farhana, a Douglass College Extern, reviews research misconduct policies with the Inspector General.**

## PI's Plagiarism was Part of a Pattern

An additional instance of plagiarism beyond that involved in the initial allegation first reported last September,<sup>13</sup> was found in the case of a PI and a co-PI at a Michigan university who appropriated an REU proposal written by scientists at another institution. In the course of reviewing the university's investigation report for accuracy and completeness, we identified a second research proposal previously submitted by the PI that contained 90 lines of apparently plagiarized text. We referred this matter back to the university.

A university committee investigated the new allegations. The PI told this committee that a graduate student provided material for his proposal, that this material accounted for the allegedly plagiarized text, and that the PI submitted his proposal to NSF without reviewing the student's contribution. The proposal provided no attribution to the student. The committee concluded that the PI's actions were reckless and constituted research misconduct, and that his behavior was part of a pattern of misconduct.

The university reprimanded the PI; required him to withdraw from all pending federal applications; excluded him from applying for federal grants for one year; barred him from serving as senior project member on any federal grant; prohibited him from serving as an NSF reviewer; and for three and a half years, institutional officials must review all his proposals prior to submission. OIG recommended that NSF find the PI committed research misconduct, send him a letter of reprimand, require assurances for any proposals submitted for three years, and prohibit him from serving as an NSF reviewer for the same period. Because the PI's plagiarized research proposal resulted in an award, we also recommended that NSF terminate the award.

## Falsification, Fabrication, and Plagiarism Found in a Single Proposal

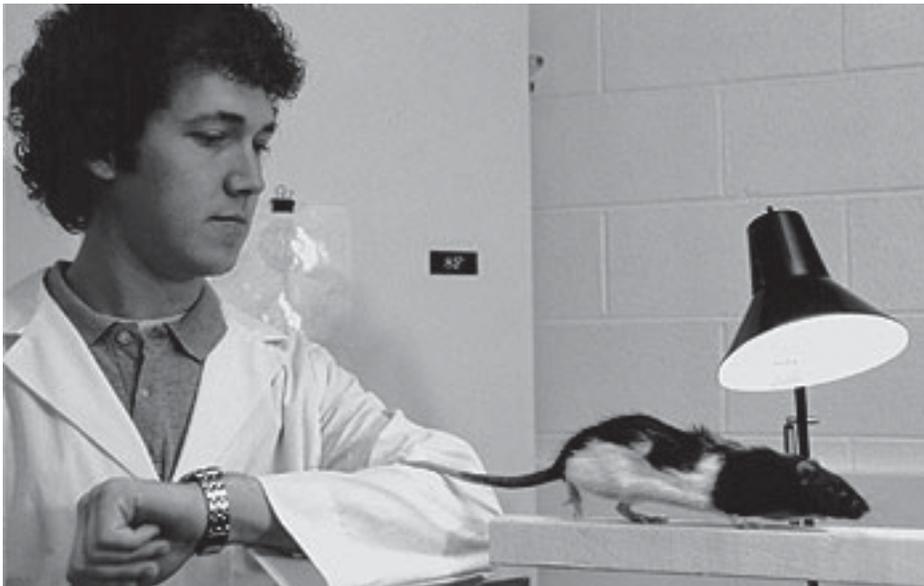
We recommended a two-year debarment for a PI who plagiarized, fabricated, and falsified text, figures, and experimental conditions in an unfunded NSF proposal. The PI's university had investigated an allegation referred by OIG, and found that the PI had committed research misconduct by copying a paragraph of text from a journal article without permission or citation, falsely presenting another's data as his own preliminary results, and copying and editing figures from published sources without attribution.

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<sup>13</sup>September 2004 Semiannual Report, p.30

The PI, an instructor at the university, edited both figures substantially and described them in the text with fabricated experimental conditions. The PI's postdoctoral advisor, whom the PI described as a consultant on the project, was a co-author on each of the source documents. However, the investigation found no indication of a formal or informal consulting relationship between the subject and his former advisor.

Because the PI's contract with the university had expired, the university's sanctions were limited and focused on restrictions concerning hiring the PI for other positions. OIG recommended that NSF debar the PI for two years; require the PI to certify completion of an ethics training program before applying for NSF funding in the future; require certifications and assurances for all documents submitted to NSF for three years following the debarment, that each submission is properly referenced and accurate; and bar the PI from serving in the NSF peer review process for three years. NSF's decision is pending.



**NSF funds some grants that utilize human or animal testing. In an unrelated project, a premed student tests a head-injured rat on the balance beam for surefootedness. *University Photocommunications, Southern Illinois University, Carbondale***

## Significant Administrative Cases

### *Non-Compliance with Human Subjects and Living Organism Regulations and Policies Forces Changes in Awarded Project*

An EPSCoR institution in Oklahoma voluntarily suspended work with animals under an REU award and ultimately changed the scope of the project to eliminate the animal work when it was unable to achieve compliance with NSF policy. NSF policy requires that work with vertebrate animals be declared at the time the proposal is submitted, and that the Institutional Animal Care and Use Committee (IACUC) review work with vertebrate animals before the award is made. Work with human subjects must comply with the Common Rule for the Protection of Human Subjects, and must be self-identified with appropriate exemptions declared or reviewed by an Institutional Review Board (IRB) before the award may be made.<sup>14</sup> An institution must assure NSF, or in some cases the Department of Health and Human Services, that its IRB or IACUC operates under the required guidelines before either committee can review and approve research at that institution.

In this case, the institution failed to self-identify its work with humans and animals in the proposal, despite its use of both as research subjects.<sup>15</sup> During the review period, the institution submitted IRB and IACUC approvals for at least some parts of the research; however, we learned that neither the IRB nor the IACUC had an approved assurance with the relevant federal offices or NSF. This called into question all of the IRB and IACUC reviews not only for this project but also for other NSF awards at the institution. After OIG notified the institution of these concerns, it took steps to correct the errors. It received an approved assurance from HHS for its IRB in a matter of weeks, but after several months it had not received an approved assurance for its IACUC. While trying to obtain the approval, the institution voluntarily suspended its work with animals with the consent of the program officer. Unable to obtain an approval for the work with animals, the institution requested a significant change in scope to remove all animal projects from the award.

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<sup>14</sup> There are provisions that cover projects that at the outset do not involve living organism research but later incorporate living organisms into the project. Review and approval must be obtained before those phases of the project may begin.

<sup>15</sup> We also learned that although the program officer correctly coded the proposal for human subjects on NSF's internal processing form, she did not code the proposal for vertebrate animal research.

## ***Improperly Used Participant Support Funds Returned to NSF***

Our office investigated two separate allegations that participant support funds were misused and recovered \$30,000 for the agency. Participant support funds are designed to defray the costs of transportation, per diem, stipends, and other related costs for participants or trainees (but not employees) in connection with NSF-supported conferences, meetings, symposia, training activities and workshops. Grantees must obtain prior written approval from the cognizant NSF program officer if they want to reallocate participant support funds to pay for other grant-related expenses.

In these cases, NSF granted funds to support collaborations between a United States scientist and a foreign scientist. The participant support funds were intended to help pay for the travel of the foreign scientists. However, the collaborations failed to take place due to visa restrictions, which prevented the foreign scientists from traveling to the United States. In both cases, the PIs reallocated the participant support costs—\$12,000 in one case and over \$18,000 in the other—to purchase supplies and equipment without permission of the NSF program officer. After the matter was brought to their attention, both institutions reimbursed NSF.

## **Reviews**

### ***NSF Accepts Recommendations to Increase Compliance with Administrative Actions***

In order to protect the interests of the federal government, OIG recommends that appropriate administrative actions be applied to those who have engaged in research misconduct or other wrongdoing. These administrative actions or sanctions include debarments, certifications, assurances, and reviewer prohibitions, and are subject to agreement and implementation by NSF management. Because OIG and NSF have a mutual interest in the efficacy of NSF's compliance program, we reviewed NSF management's efforts to ensure compliance with the administrative actions it imposes.

The most significant administrative action that NSF can take against a subject is government-wide debarment. Subjects who are debarred are included on the Excluded Parties List System (EPLS), which NSF (like all federal agencies) is required to check before making an award. We found

that NSF had stopped checking the list, relying instead on the awardee's e-signed certifications. When NSF's debarment regulation was revised in November 2003 to reflect changes in the government-wide common rule, it deleted the previous certification requirement, relying instead on checking EPLS. Accordingly, we recommended that NSF resume checking EPLS, as required by its regulation. NSF initially responded that it intended to continue its practice of not checking EPLS, asserting that "NSF's approach is consistent with the direction the federal government is headed" and "in keeping with a government-wide approach." Subsequently, NSF deliberated and then implemented a policy requiring checking EPLS for all awards.

In addition, we recommend that NSF management require a subject to submit certifications or assurances regarding compliance with requirements as appropriate. Because our review found two cases in which subjects submitted proposals to NSF without submitting the required certifications, we recommended that NSF modify its proposal processing system to ensure that proposals submitted by PIs who are subject to such requirements will not proceed through the merit review process unless the required certifications or assurances have been received. NSF agreed to implement this recommendation.

As a resolution of some cases, a subject is prohibited from reviewing proposals for a specified period of time. However, we determined that the prohibition is effective only if the subject's name is already in NSF's reviewer database. We recommended that NSF ensure that such subjects' names are entered into the system so they cannot be used as reviewers, and NSF agreed to do so.

# Statistical Data

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## Reporting Terms Defined

Some of the more common terms that we use in reporting audit statistics and findings are defined below:

**Questioned Cost.** Auditors question costs because of an alleged violation of a provision of a law, regulation, grant, cooperative agreement, or contract. In addition, a questioned cost may be a finding in which, at the time of the audit, either a cost is not supported by adequate documentation, or the expenditure of funds for the intended purpose is deemed unnecessary or unreasonable.

**Unsupported Cost.** A cost that is questioned because it is not supported by adequate documentation at the time of audit.

**Unresolved Costs.** Costs that have been claimed, but can not be evaluated at the time of the audit because either: 1) the criteria for their measurement has not been established; 2) the period for establishing the criteria is not complete or 3) the criteria is unclear or ambiguous. This category most frequently applies to indirect costs. For example, if a final indirect cost rate has not been determined for a particular period, the claimed indirect costs for that period would be classified by the auditor as unresolved costs.

**Management Decision.** Management's evaluation of the findings and recommendations included in the audit report and the issuance of a final decision by management containing its response to such findings and recommendations. It is important to note that NSF is responsible for making a management decision regarding questioned costs that determines whether they will be sustained (i.e., disallowed) or allowed.

**Funds Put to Better Use.** Audit recommendations that identify ways to improve the efficiency of programs frequently lead to prospective benefits over the life of an award or funds put to better use. Examples include reducing outlays, deobligating funds, or avoiding unnecessary expenditures.

**Final Action.** The completion of all management actions that are described in a management decision with respect to audit findings and recommendations. If management concluded that no actions were necessary, final action occurs when a management decision is issued.

**Compliance or Internal Control Issues.** Audits often result in recommendations either to improve the auditee's compliance with NSF and federal regulations, or to strengthen the auditee's internal control structure to safeguard federal funds from fraud, waste, abuse, and mismanagement.

## Audit Reports Issued with Recommendations for Better Use of Funds

	<b>Dollar Value</b>
<b>A.</b> For which no management decision has been made by the commencement of the reporting period	<b>\$5,174,370</b>
<b>B.</b> Recommendations that were issued during the reporting period	<b>\$620,020</b>
<b>C.</b> Adjustments related to prior recommendations	<b>\$0</b>
<b>Subtotal of A+B+C</b>	<b>\$5,794,390</b>
<b>D.</b> For which a management decision was made during the reporting period	<b>\$5,174,370</b>
<b>i)</b> Dollar value of management decisions that were consistent with OIG recommendations	<b>\$5,174,370</b>
<b>ii)</b> Dollar value of recommendations that were not agreed to by management	<b>\$0</b>
<b>E.</b> For which no management decision had been made by the end of the reporting period	<b>\$620,020</b>
For which no management decision was made within 6 months of issuance	<b>\$0</b>

## Audit Reports Issued with Questioned Costs

	Number of Reports	Questioned Costs	Unsupported Costs
A. For which no management decision has been made by the commencement of the reporting period	21	\$2,586,187	\$1,175,940
B. That were issued during the reporting period	12	\$42,163,896	\$3,359,372
C. Adjustment related to prior recommendations	2	(\$451,034)	(\$35,534)
<b>Subtotal of A+B+C</b>	<b>35</b>	<b>\$44,299,049</b>	<b>\$4,499,778</b>
D. For which a management decision was made during the reporting period	18	\$660,127	\$25,100
i) dollar value of disallowed costs	N/A	\$149,491	N/A
ii) dollar value of costs not disallowed	N/A	\$513,636	N/A
E. For which no management decision had been made by the end of the reporting period	15	\$43,638,922	\$4,474,678
For which no management decision was made within 6 months of issuance	3	\$1,487,673	\$1,115,306

## Audit Reports Involving Cost-Sharing Shortfalls

	Number of Reports	Cost-Sharing Promised	At Risk of Cost Sharing Shortfall (Ongoing Project)	Actual Cost Sharing Shortfalls (Completed Project)
A. Reports with monetary findings for which no management decision has been made by the beginning of the reporting period:	1	\$0	\$141,114	\$0
B. Reports with monetary findings that were issued during the reporting period:	3	\$13,959,578	\$53,875	\$6,844,395
C. Adjustments related to prior recommendations		\$0	\$0	\$0
<b>Total of Reports with Cost Sharing Findings (A+B+C)</b>	<b>4</b>	<b>\$13,959,578</b>	<b>\$194,989</b>	<b>\$6,844,395</b>
D. For which a management decision was made during the reporting period:	N/A	\$0	\$0	\$0
1. Dollar value of cost-sharing shortfall that grantee agreed to provide	N/A	N/A	\$0	\$0
2. Dollar value of cost-sharing shortfall that management waived	N/A	N/A	\$0	\$0
E. Reports with monetary findings for which no management decision has been made by the end of the reporting period	4	\$13,959,578	\$194,989	\$6,844,395

## Status of Recommendations that Involve Internal NSF Management Operations

<b>Open Recommendations (as of 9/30/04)</b>	
Recommendations Open at the Beginning of the Reporting Period <sup>16</sup>	<b>65</b>
New Recommendations Made During Reporting Period	<b>34</b>
Total Recommendations to be Addressed	<b>99</b>
<b>Management Resolution of Recommendations<sup>17</sup></b>	
Awaiting Resolution	<b>43</b>
Resolved Consistent With OIG Recommendations	<b>56</b>
<b>Management Decision That No Action is Required</b>	<b>0</b>
<b>Final Action on OIG Recommendations<sup>18</sup></b>	
Final Action Completed	<b>15</b>
Recommendations Open at End of Period	<b>84</b>
<b>Aging of Open Recommendations</b>	
<b>Awaiting Management Resolution:</b>	
0 through 6 months	<b>32</b>
7 through 12 months	<b>8</b>
More than 12 months	<b>3</b>
<b>Awaiting Final Action After Resolution:</b>	
0 through 6 months	<b>18</b>
7 through 12 months	<b>12</b>
More than 12 months	<b>11</b>

<sup>16</sup> The ending balance as of September 2004 was reported as 62 recommendations. However, three open recommendations were not included in the prior period semiannual report.

<sup>17</sup> "Management Resolution" occurs when the OIG and NSF management agree on the corrective action plan that will be implemented in response to the audit recommendations.

<sup>18</sup> "Final Action" occurs when management has completed all actions it agreed to in the corrective action plan.

## List of Reports

### NSF and CPA Performed Reviews

Report Number	Subject	Questioned Costs	Unsupported Costs	Better Use of Funds	Cost Sharing At-Risk
05-1-001	Fresno Unified School District	\$6,858,207	\$2,699,162	\$0	\$0
05-1-002	Springfield Technical Community College	\$230,133	\$0	\$0	\$0
05-1-003	ScienCentral, Inc., and the Center for Science in the Media	\$921,489	\$658,950	\$0	\$0
05-1-004	University of South Dakota	\$142,592	\$0	\$620,020	\$53,875
05-1-005	Raytheon Polar Services Company	\$33,425,115	\$0	\$0	\$0
05-1-006	Texas State Technical College, West Texas	\$24,745	\$0	\$0	\$0
05-2-001	FY04 FISMA Evaluation Summary	\$0	\$0	\$0	\$0
05-2-002	FY04 FISMA Evaluation Reports	\$0	\$0	\$0	\$0
05-2-003	FY04 NSF Financial Statement Audit	\$0	\$0	\$0	\$0
05-2-004	FY04 NSF Special-Purpose Financial Statements	\$0	\$0	\$0	\$0
05-2-005	United States-Mexico Foundation for Science	\$0	\$0	\$0	\$0
05-6-001	Associated Universities, Inc.	\$0	\$0	\$0	\$0
05-6-002	Survey of Large Facilities Projects	\$0	\$0	\$0	\$0
05-6-004	Dakota State University	\$0	\$0	\$0	\$0
05-6-005	Amtrak OIG Peer Review	\$0	\$0	\$0	\$0
	<b>Total:</b>	<b>\$41,602,281</b>	<b>\$3,358,112</b>	<b>\$620,020</b>	<b>\$53,875</b>

## NSF-Cognizant Reports

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
05-4-001	The Computing Research Association, Inc.	\$12,647	\$0	\$0
05-4-011	Gadsden Independent School District	\$0	\$0	\$0
05-4-010	American Assoc. of Physics Teachers, Inc.	\$0	\$0	\$0
05-4-002	ABET, Inc.	\$0	\$0	\$0
05-4-005	Universities Research Association, Inc.	\$0	\$0	\$0
05-4-006	Carnegie Institute	\$16,014	\$0	\$0
05-4-008	Marine Biological Laboratory	\$0	\$0	\$0
05-4-009	Academy of natural Sciences	\$0	\$0	\$0
	<b>Total:</b>	<b>\$28,661</b>	<b>\$0</b>	<b>\$0</b>

## Other Federal Audits

Report Number	Subject	Questioned Costs	Unsupported Costs	Cost Sharing At-Risk
05-5-027	Clark Atlanta University	\$240,232	\$0	\$0
05-5-032	University of Puerto Rico	\$290,262	\$0	\$0
05-5-026	The University Corporation	\$1,200	\$0	\$0
05-5-033	Harbor Branch Oceanographic Institute, Inc.	\$1,260	\$1,260	\$0
	<b>Total:</b>	<b>\$532,954</b>	<b>\$1,260</b>	<b>\$0</b>

## **Audit Reports With Outstanding Management Decisions**

This section identifies audit reports involving questioned costs, funds put to better use, and cost sharing at risk where management had not made a final decision on the corrective action necessary for report resolution within 6 months of the report's issue date. At the end of the reporting period there were three reports remaining that met this condition. The status of recommendations that involve internal NSF management is described on page 56.

## Investigations Case Activity

### October 1, 2004 - March 31, 2005

	Preliminary	Civil/Criminal	Administrative	Total
Active Cases at Beginning of Period	73	48	47	168
Opened Cases	78	34	32	144
Closed Cases	120	27	31	178
Active Cases at End of Period	31	55	48	134

## Investigations Case Statistics

Referrals to DOJ	3
Criminal Convictions/Pleas	0
Civil Settlements	0
Administrative Actions	4
Investigative Recoveries	\$230,568
Research Misconduct Findings by NSF	4
Cases Forwarded to NSF Management for Action	7
Cases Forwarded to NSF Management in Prior Periods Awaiting Action	2
Assurances and Certifications <sup>19</sup>	
Number of Cases Requiring Assurances During This Period	4
Number of Cases Requiring Certifications During This Period	3
Assurances Received During This Period	0
Certifications Received During This Period	0
Number of Debarments in Effect During This Period	8

<sup>19</sup>NSF accompanies some actions with a certification and/or assurance requirement. For example, for a specified period, the subject may be required to confidentially submit to OIG a personal certification and/or institutional assurance that any newly submitted NSF proposal does not contain anything that violates NSF regulations.

## Freedom of Information Act and Privacy Act Requests

Our office responds to requests for information contained in our files under the Freedom of Information Act (“FOIA,” 5 U.S.C. paragraph 552) and the Privacy Act (5 U.S.C. paragraph 552a). During this reporting period:

- We received 11 FOIA requests. The response time ranged between 3 days and 18 days, with a median of 9 days and an average of 9 days.
- We received 1 Privacy Act requests.
- We did not receive any appeals.



## Reporting Requirements

Under the Inspector General Act, we report to the Congress every six months on the following activities:

- Reports issued, significant problems identified, the value of questioned costs and recommendations that funds be put to better use, and NSF's decisions in response (or, if none, an explanation of why and a desired timetable for such decisions). (See pp. 5, 13, 51)
- Matters referred to prosecutors, and the resulting prosecutions and convictions. (See pp. 27, 62)
- Revisions to significant management decisions on previously reported recommendations, and significant recommendations for which NSF has not completed its response. (See pp. 24, 60 )
- Legislation and regulations that may affect the efficiency or integrity of NSF's programs. (See p. 8)
- OIG disagreement with any significant decision by NSF management. (None)
- Any matter in which the agency unreasonably refused to provide us with information or assistance. (None)

## Acronyms

AICPA	American Institute of CPAs
AIGI	Associate IG for Investigations
CFO	Chief Financial Officer
CIO	Chief Information Officer
COI	Conflict of Interest
COV	Committee of Visitors
DACS	Division of Acquisition and Cost Support
DCAA	Defense Contract Audit Agency
DD	Deputy Director
DFE	Designated Federal Entity
DGA	Division of Grants and Agreements
DOJ	Department of Justice
ECIE	Executive Council of Integrity and Efficiency
EPLS	Excluded Parties List System
EPSCoR	Experimental Program to Stimulate Competitive Research
FISMA	Federal Information Security Management Act
FOIA	Freedom of Information Act
FY	Fiscal Year
GAO	General Accounting Office
GPM	Grant Policy Manual
GPRA	Government Performance and Results Act
HHS	Department of Health and Human Services
IACUC	Institutional Animal Care and Use Committee
IG	Inspector General
IPA	Intergovernmental Personnel Act
IRB	Institutional Review Board
IR/D	Individual Research and Development
KMS	OIG Knowledge Management System
LFP	Large Facility Project Office
MIRWG	Misconduct in Research Working Group
MRE	Major Research Equipment
MREFC	Major Research Equipment and Facilities Construction
MSP	Math and Science Partnership
NCURA	National Council of University Research Administrators
NIH	National Institute of Health
NSB	National Science Board
NSF	National Science Foundation

OA	Office of Audit
OI	Office of Investigations
OIG	Office of Inspector General
OMB	Office of Management and Budget
OPP	Office of Polar Programs
ORI	Office of Research Integrity
PCIE	President's Council on Integrity and Efficiency
PI	Principal Investigator
PFCRA	Program Fraud Civil Remedies Act
QCR	Quality Control Review
REU	Research Experiences for Undergraduates
SBIR	Small Business Innovation Research
SES	Senior Executive Service
STC	Science and Technology Centers
TSP	Thrift Savings Plan
USAP	United States Antarctic Program
VSEE	Visiting Scientists, Engineers and Educators

## OIG Staff Photos

**Dan Boesz and Dr. Christine Boesz pay tribute to Gloria vanKan (center), Assistant to the IG, on her retirement from the National Science Foundation.**



**Dr. Bruce Umminger of OIA and Bruce Carpel, Senior Advisor to the IG, discuss the OIG Semiannual Report.**



**Deborah Cureton, AIGA, presents a plaque to Ulysses Goodwin, Audit Manager, to commemorate his retirement from 34 years of federal service.**





**Dr. Ken Busch, Investigative Scientist, serves as emcee of the OIG Holiday Party.**



**Bandana Sen, Auditor, and Linda Burch, Program Analyst, celebrate the holidays.**



**Brian Hess, Investigator and new parent, balances work and family responsibilities at the Holiday Party.**



# Organization Chart

